

REMARKS

Claims 1-20 are all the claims pending in the application. Claim 1 is the only independent claim.

The Examiner has not accepted the Proposed Drawing Corrections filed on October 25, 2003. Therefore, if the proposed drawing correction are acceptable, Applicants request that the Examiner indicate that the drawing corrections are accepted in the next correspondence.

Claim Rejections Under 35 U.S.C. § 102 and §103

Claims 1-17 are rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by *previously cited* Japanese Patent Publication No. 06-225573 ("Mori"). Claims 18-20 are rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable in view of JP '573 in view of Okano (USA 5,777,447).

Claim 1 has been amended to recite a motor control device in which the micro-controller limits a motor current in accordance with an integrated value of a predetermined function of a phase current of the motor "as an index of power consumption." This amendment is not new matter because it has support in the specification at least based on the non-limiting embodiment discussed on pages 10 and 11 in which power functions of phase current are integrated. Applicants respectfully request that the Examiner withdraw this rejection at least because Mori does not teach or suggest a motor control device in which the micro-controller limits a motor current in accordance with an integrated value that is "an index of power consumption," in addition to being a predetermined function of phase current.

In the non-limiting embodiment discussed above, the integrated value of a predetermined power function of a phase current is an integrated value of each phase of the three phase current and becomes an index of power consumption. Therefore, according to the present invention, the motor current is limited in accordance with an integrated value of a predetermined function of a phase current so that an appropriate over-heat protection is performed.

In contrast, Mori discloses a controller that limits the voltages of the orthogonal coordinates VO, VT by using proportional integration (“PI”) to control a deviation between a current detected value IOFB, ITFB and a target values of the orthogonal coordinates. Although this limiting is based on an integrated value, the PI controlled integrated value of Mori cannot also be “an index of power consumption” because the integrated value is based on current command values IOS, ITS (which are not indicative of power consumption), in addition to the detected values IOFB, ITFB.

As such, Applicants request that the Examiner withdraw the rejection of claim 1 at least because Mori does not teach or suggest a motor control device in which the micro-controller limits a motor current in accordance with an integrated value that is “an index of power consumption.” In addition, Applicants request that the Examiner withdraw the rejection of claims 2-17 at least because of their dependency from claim 1, and that the Examiner withdraw the rejection of claims 18-20 at least because of their dependency from claim 1 and because Okano, which was cited by the Examiner as showing a control apparatus for a motor, does not cure the deficiencies in Mori discussed above.

AMENDMENT UNDER 37 C.F.R. § 1.116
Appln. No. 09/883,391

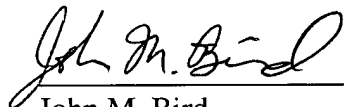
Docket No. Q64978
Art Unit 2837

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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WASHINGTON OFFICE



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PATENT TRADEMARK OFFICE

Date: March 11, 2003

APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

1. (Twice Amended) A motor control device for a multi-phase motor, comprising:
 - a drive circuit for driving said multi-phase motor; and
 - a micro-controller for controlling said drive circuit;wherein said micro-controller limits a motor current in accordance with an integrated value of a predetermined function of a phase current of the motor as an index of power consumption.